Selected Abstracts from the August Issue of the European Journal of Vascular and Endovascular Surgery

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Clinical Relevance of Advanced Glycation Endproducts for Vascular Surgery

Meerwaldt R., van der Vaart M.G., van Dam G.M., Tio R.A., Hillebrands J.-L., Smit A.J., Zeebregts C.J. Eur J Vasc Endovasc Surg 2008;36:125-31.

Atherosclerosis is the main contributor to cardiovascular disease and leads to intimal plaque formation, which may progress to plaque rupture with subsequent thromboembolic events and/or occlusion of the arterial lumen. There is increasing evidence that the development or progression of atherosclerosis is associated with advanced glycation endproducts (AGEs). AGEs are a heterogeneous group of compounds formed by the non-enzymatic reaction of reducing sugars with proteins, lipids, and nucleic acids. An increased understanding of the mechanisms of formation and interaction of AGEs has allowed the development of several potential anti-AGE strategies. This review summarizes AGE formation and biochemistry, the pathogeneic role of AGEs in cardiovascular disease, anti-AGE therapies and clinical relevance to vascular surgery.

Local Versus General Anaesthesia for Carotid Endarterectomy – Improving the Gold Standard ?

Lutz H.-J., Michael R., Gahl B., Savolainen H. Eur J Vasc Endovasc Surg 2008;36:145-9.

Objective: Carotid endarterectomy (CEA) reduces stroke risk among selected patients. To achieve this, low operative risk is crucial. Outcome may depend on whether local (LA) or general (GA) anaesthesia is used. The aim of our study was to assess the risks of CEA under LA compared with that under GA. Primary endpoint was neurological outcome.

Design: Retrospective study, prospective data bank.

Patients and methods: Analysis was performed of hospital charts from 1341 consecutive patients undergoing carotid endarterectomy between January 1995 and December 2004. The patients were divided into two groups according to intraoperative anaesthesia (LA 465 patients or GA 876 patients).

Results: Cerebral complications (transient ischemic attacks and stroke combined) were more common in the GA group (6.9% vs. 3.4%, $p < 0.009$, relative risk 0.48, 95% confidence interval (CI) 0.272–0.839). Mortality was 0.5% (LA) vs. 0.8% (GA). Combined death and stroke rate were not different between groups (4.1% vs. 3.2%). Postoperative hypertension episodes were more common in the LA group (47.7%, vs. GA 20.4%, $p < 0.001$). Haematomas requiring surgery were more common in the GA group (6.4% vs. 3.0%, $p < 0.02$).

Conclusion: CEA can be performed safely under LA. It may improve the results and lead to better neurological outcome as compared to GA. Risk factor analysis did not reveal specific risk groups.

Improved Outcomes with Endovascular Stent Grafts for Thoracic Aorta Transections

Mohan I.V., Hitos K., White G.H., Harris J.P., Stephen M.S., May J., Swinnen J., Fletcher J.P. Eur J Vasc Endovasc Surg 2008;36:152-7.

Objective: To retrospectively assess the outcome of endovascular stent-graft implantation for thoracic aortic transections (ETAT).

Design: Retrospective review.

Methods: 16 patients median age 30 years, treated between May 2000 and April 2007. Median injury severity score was 33 (range 29 to 66) in 14 acute patients; 2 patients had thoracic pseudoaneurysms. The Cook-Zenith endograft was used in eight patients, Medtronic-Talent (6) and Gore-Excluder (2). Average procedure time was 90 minutes, blood loss 100 (range 40 to 3000) mls, screening time 10.8 (range 5.9 to 22.6) minutes, and contrast dose was 195 (range 60 to 400) mls.

Results: Graft deployment was successful in all cases. There was one death within 30 days. The left subclavian artery was completely covered in one case, and partially in three. Two patients had Type I endoleak, and one delayed Type II endoleak. One patient had iatrogenic right coronary artery dissection. Two patients developed difficult to treat hypertension, and one acute renal failure.

Conclusion: Endovascular intervention is a safe and effective treatment for aortic transection in multiple trauma patients. ETAT reduces the major morbidity and mortality associated with open repair in multiple trauma patients. The majority of these patients are young and long-term follow up is necessary to assess graft durability.

Vascular Injuries Caused by Acupuncture

Bergqvist D. Eur J Vasc Endovasc Surg 2008;36:160-3.

Aim: To systematically review the literature on vascular injuries caused by acupuncture.

Method: Systematic literature search in Medline and PubMed.

Results: Twentyone cases were identified and the majority developed symptoms in direct connection with the acupuncture treatment. Three patients died, two from pericardial tamponade and one from an aortoduodenal fistula. There were five more tamponades, seven pseudoaneurysms, two with ischaemia, two with venous thrombosis, one with compartment syndrome and one with bleeding. The two patients with ischaemia had remaining sequeleae. Information on follow-up was suboptimal with no information in nine patients.

Conclusion: Vascular injuries are rare, bleeding and pseudoaneurysm dominating. Follow-up is insufficient in the hitherto published papers.

Screening for Abdominal Aortic Aneurysm Reduces Overall Mortality in Men. A Meta-analysis of the Mid- and Long-term Effects of Screening for Abdominal Aortic Aneurysms

Lindholt J.S., Norman P. Eur J Vasc Endovasc Surg 2008;36:167-71.

Background: Four randomised controlled trials of screening older men for abdominal aortic aneurysms (AAA) have been completed. A meta-analysis was performed to examine the pooled effects of screening on both mid- and long-term AAA-related and total mortality, and operations for AAA.

Methods: Pooled mid-term (3½–5 years) and long term (7–15 years) effects were calculated as odds-ratios (ORs) with 95% confidence intervals in fixed effect models. Long-term data from the West Australian trial were limited to all-caurse deaths. Heterogeneity between the studies was assessed by the χ^2-test. In cases of heterogeneity, random effect models were used.

Results: The pooled mid-term analysis showed the offer of screening caused a significant reduction in AAA related mortality (OR = 0.56, 95% C.I. 0.44,0.72), and emergency operations (OR = 0.55, 95% C.I.: 0.39; 0.76), while the number of elective operations increased significantly (OR = 3.27, 95% C.I.: 2.14; 5.00). Overall mortality was reduced, but not significantly (OR = 0.94, 95% C.I.: 0.86; 1.02). The long-term results also showed a significant reduction in AAA-related mortality (OR = 0.47, 95% C.I.: 0.25; 0.90), overall mortality (OR = 0.94, 95% C.I.: 0.92; 0.97) and emergency operations (OR = 0.48, 95% C.I.: 0.28; 0.83), while the number of elective operations increased significantly (OR = 2.81, 95% C.I.: 2.40; 3.30).

Conclusion: Population screening for AAA reduces AAA-related and overall mortality, however local differences may exits which could influence cost effectiveness of screening.

Objective Risk-scoring Systems for Repair of Abdominal Aortic Aneurysms: Applicability in Endovascular Repair?

Bohm N., Wales L., Dunckley M., Morgan R., Loftus I., Thompson M. Eur J Vasc Endovasc Surg 2008;36:172-7.

Objectives: Recent studies propose the use of objective risk-scoring systems as a clinical tool for selecting patients for open or endovascular abdominal aortic aneurysm repair (EVR). The aim of this study was to evaluate four established risk-scoring systems for accuracy of prediction of early mortality and morbidity following EVR.

Patients and methods: 266 consecutive patients undergoing elective EVR at St. George's Vascular Institute between July 2001 and January 2007 were studied using a prospective database. The Glasgow Aneurysm Score (GAS), the Vascular Physiology and Operative Severity Score for the enUmeration of Mortality and Morbidity (V-POSSUM), the modified Customised Probability Index (m-CPI) and the Customised Probability Index (CPI) were applied for prediction of 30-day mortality and morbidity. Accuracy of prediction was compared using receiver operating characteristics (ROC) curve analyses.

Results: 30-day mortality and morbidity rates were 4% (11/266) and 8% (22/266) respectively. For prediction of mortality, GAS, V-POSSUM,